

WHAT IS CLAIMED IS:

1. A polymeric crosslinking agent comprising:
an inert water soluble polymeric component,
a biodegradable component, and
a protein reactive functional component.
2. The crosslinking agent of claim 1, wherein said inert polymeric component is flanked at each end with said biodegradable component which is flanked at each end with said protein reactive functional component.
3. A polymeric crosslinking agent comprising a biodegradable component, polyalkylene oxide, and at least three reactive functional groups that are each capable of forming a covalent bond in water with at least one functional group chosen from the group consisting of amine, thiol, and carboxylic acid.
4. The crosslinking agent of claim 3 wherein the biodegradable component does not contain amino acids assembled in amino acid sequences that are enzymatically degradable when the crosslinker is placed in a patient.

5. The crosslinking agent of claim 3 wherein the biodegradable component comprises a polymer chosen from the group consisting of glycolide, lactide, caprolactone, dioxanone, and trimethylene carbonate.

6. The crosslinking agent of claim 3 wherein the biodegradable component comprises a polymer chosen from the group consisting of polyhydroxyacid, polyorthocarbonate, polyanhydride, polylactone, polyaminoacid, and polyphosphate.

7. A polymeric crosslinking agent comprising three branches that each comprise a biodegradable polymer hydrolysable under in vivo conditions and a polyalkylene oxide polymer with each branch being terminated with a reactive end group capable of forming a covalent bond in water with at least one functional group chosen from the group consisting of amine, thiol, and carboxylic acid.

8. The crosslinking agent of claim 7 having at least four of the branches.

9. The crosslinking agent of claim 7 wherein the biodegradable polymer comprises a polymer chosen from the group consisting of glycolide, lactide, caprolactone, dioxanone, and trimethylene carbonate.

10. The crosslinking agent of claim 7 wherein the biodegradable polymer comprises a polymer chosen from a group consisting of polyhydroxyacid, polyorthocarbonate, polyanhydride, polylactone, polyaminoacid, and polyphosphate.

11. The crosslinking agent of claim 7 wherein the polyalkylene oxide is polyethylene oxide.

12. The crosslinking agent of claim 7 having a solubility of at least 1 g per 100 milliliters of water.

13. The crosslinking agent of claim 7 having a molecular weight from 600 to 10,000.

14. A method of making a crosslinking agent comprising activating at least three end groups of a polymer that comprises a biodegradable component hydrolyzable under in vivo conditions and polyalkylene oxide such that the polymer is thereby terminated with reactive functional groups that are capable of forming a covalent bond in water with at least one functional group chosen from the group consisting of amine, thiol, and carboxylic acid.

15. The crosslinking agent of claim 14 wherein the biodegradable polymer comprises a polymer chosen from the group consisting of glycolide, lactide, caprolactone, dioxanone, and trimethylene carbonate.

16. The crosslinking agent of claim 16 wherein the biodegradable polymer comprises a polymer chosen from the group consisting of polyhydroxyacid, polyorthocarbonate, polyanhydride, polylactone, polyaminoacid, and polyphosphate.

17. The crosslinking agent made according to the process of claim 14.
18. The crosslinking agent made according to the process of claim 15.
19. A polymeric crosslinking agent comprising three branches that each comprise a biodegradable polymer hydrolysable under in vivo conditions and a polyalkylene oxide polymer with each branch being terminated with reactive end group means capable of forming a covalent bond in water with at least one functional group chosen from the group consisting of amine, thiol, and carboxylic acid.
20. The crosslinking agent of claim 19 wherein the biodegradable polymer comprises a polymer chosen from the group consisting of glycolide, lactide, caprolactone, dioxanone, and trimethylen carbonate.
21. The crosslinking agent of claim 19 wherein the biodegradable polymer comprises a polymer chosen from the group consisting of polyhydroxyacid, polyorthocarbonate, polyanhydride, polylactone, polyaminoacid, and polyphosphate.
22. The crosslinking agent of claim 19 having a molecular weight from 600 to 10,000.

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